

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 30 Nov 2005

### Production Information

Total Accumulated kWh: <b>2,950,143</b>	kWh This Report Period: <b>38,080</b>
Total Generating Hours to date: <b>17,792</b>	Total Hours Generation This Month: <b>233</b>
Total Hours in Operation: <b>22,529</b>	Total Hours downtime since installed: <b>5,169</b>
Overall Operational Availability: <b>.79</b>	Monthly Operational Availability*: <b>.647</b>
Gas Meter Reading: <b>25068</b>	Gas Consumption This Period**: <b>461</b>

Net Electrical Output (kWh): **29,341**

Monthly Capacity Factor: **.453** (Actual kWh/Total Possible kWh=250kW x 336 hours)

Approximate Gas Cost Per CCF is approx. \$1.2846 (based on most recent total bill cost & consumption)

\* Monthly operational availability based on 14 operational days.

\*\* Multiply X10 for CCF = \$ **5,922.01**

Please note electrical production data was extracted at midnight November 30, 2005. The gas meter reading was collected December 1, 2005 at 0800.

### Fuel Cell Operational Status (during reporting period):

The following is a summary of the work accomplished during November 2005.

The Coast Guard unit entered the month operating at rated power.

- The stack reached End of Life on November 14<sup>th</sup>.
- Plant availability at 69%.

The following Major component was installed:

- None.

The following corrective maintenance activities were conducted:

- ECNs (software upgrades).

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Power operations up to November 14th
- 1 Shutdown
- Current condition is cold shutdown due to stack end of life

**Upcoming Activities (for next monthly period):**

Winterize water treatment system and removal of load leveler. Commence with project close out planning.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

Major Project MilestoneDate

Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
Complete Fuel Cell Power Plant Installation	14 Mar 2003 (Completed)
Startup	27 March 2003 (Completed)
Begin Acceptance Testing	13 April 2003 (Completed)
Fuel Cell Accepted & On Line	16 May 2003 (Completed)
Commence First Year of Operation	17 May 2003 (Completed)
Tentative "Ribbon Cutting" Ceremony	19 May 2003 (Completed)
Post Project Report to MTC	02 Feb 2004 (Completed)
End of Year 1 Operating Report	30 August 2004 (Completed)
Completion of RDC Project Report	30 November 2004 (Completed)
Proposed turn over to Airsta Cape Cod	01 October 2004 (Completed)
Bi-Metering and interconnection Upgrade	31 December 2005 ( <b>On Hold</b> )

**Outlook (general comments on overall "health" of project and upcoming challenges):**

Now in the process of conducting close out planning of the project due to the stack end of life.

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 31 Oct 2005

### Production Information

Total Accumulated kWh: <b>2,912,230</b>	kWh This Report Period: <b>105,707</b>
Total Generating Hours to date: <b>17,562</b>	Total Hours Generation This Month: <b>657</b>
Total Hours in Operation: <b>22,193</b>	Total Hours downtime since installed: <b>4,681</b>
Overall Operational Availability: <b>0.79</b>	Monthly Operational Availability: <b>.883</b>
Gas Meter Reading*: <b>24607</b>	Gas Consumption This Period*: <b>884</b>

Net Electrical Output (kWh): **89,292**

Monthly Capacity Factor: **.568** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **11,806.70**

Please note electrical production data was extracted at midnight October 31, 2005. The gas meter reading was collected Nov. 1, 2005 at 0800.

### Fuel Cell Operational Status (during reporting period):

The following is a summary of the work accomplished during October 2005.

The unit entered the month operating at rated power.

- The unit tripped to HSBY on Oct 9 due to a snapped wire in the Reverse Power Relay Antenna (external factor). The fault was fixed in 3.5 days.
- On Oct 30 the unit went to emergency shut down due to grid disturbance.
- Plant was available for actual operation for 100% of the month

The following Major component was installed:

- Load Leveler (final hook-up not yet completed waiting for SF6).

The following corrective maintenance activities were conducted:

- None

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- 0 Shutdown, 1 ESD (Emergency Shutdowns) (due to external factor)
- Current condition is full power

**Upcoming Activities (for next monthly period):**

Continue working on funding and operation plan.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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Post Project Report to MTC	02 Feb 2004 (Completed)
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Completion of RDC Project Report	30 November 2004 (Completed)
Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
Bi-Metering and interconnection Up-grade	<b>31 December 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

None

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 30 September 2005

### Production Information

Total Accumulated kWh: <b>2,806,176</b>	kWh This Report Period: <b>115,156</b>
Total Generating Hours to date: <b>16,905</b>	Total Hours Generation This Month: <b>710</b>
Total Hours in Operation: <b>21,449</b>	Total Hours downtime since installed: <b>4,594</b>
Overall Operational Availability: <b>0.7881</b>	Monthly Operational Availability: <b>.9861</b>
Gas Meter Reading*: <b>023723</b>	Gas Consumption This Period*: <b>1321</b>

Net Electrical Output (kWh): **100476.55**

Monthly Capacity Factor: **.6397** (Actual kWh/Total Possible kWh=250kW x 720 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **13,875.78**

Please note electrical production data was extracted at midnight September 30, 2005. The gas meter reading was collected on October 4, 2005 at 11:00 am.

### Fuel Cell Operational Status (during reporting period):

The following is a summary of the work accomplished during September 2005.

The Coast Guard unit entered the month operating at rated power.

- Plant availability at 100% for month

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- None

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- 0 Shutdown, 1 ESD (Emergency Shutdowns)
- Current condition is full power

### Activities this Past Month

Funding was approved for a limited amount the maintenance contract was modified and operation plan was created and submitted, we are awaiting final approval.

Bi-metering and Interconnection is in the process of installation completion is expected by Oct 21, 2005.

### Upcoming Activities (for next monthly period):

Completion of Bi-metering and Interconnection up-grade effort is anticipated.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

#### Major Project Milestone

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Completion of RDC Project Report	30 November 2004 (Completed)
Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 October 2005</b>

**Outlook (general comments on overall "health" of project and upcoming challenges):**

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 31 August 2005

### Production Information

Total Accumulated kWh: <b>2,691,020</b>	kWh This Report Period: <b>125,537</b>
Total Generating Hours to date: <b>16,195</b>	Total Hours Generation This Month: <b>744</b>
Total Hours in Operation: <b>20,779</b>	Total Hours downtime since installed: <b>4,584</b>
Overall Operational Availability: <b>0.78</b>	Monthly Operational Availability: <b>1.00</b>
Gas Meter Reading*: <b>022402</b>	Gas Consumption This Period*: <b>1062</b>

Net Electrical Output (kWh): **110301.7**

Monthly Capacity Factor: **.675** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **14,184.07**

Please note electrical production data was extracted at midnight August 31, 2005. The gas meter reading was collected on Aug 30, 2005 at 07:00.

### Fuel Cell Operational Status (during reporting period):

The following is a summary of the work accomplished during August 2005.

The Coast Guard unit entered the month operating at rated power.

- Plant availability at 100% for month

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- Corrected Nitrogen system leak

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- 0 Shutdowns, 0 ESD (Emergency Shutdowns)
- Current condition is full power

**Activities this Past Month**

Funding and operation plan was submitted, we are awaiting final approval.  
Bi-metering and Interconnection component testing was accomplished.

**Upcoming Activities (for next monthly period):**

Completion of Bi-metering and Interconnection up-grade effort is anticipated.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 Sept 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**



## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 31 July 2005

### Production Information

Total Accumulated kWh: <b>2,565,483</b>	kWh This Report Period: <b>90,721</b>
Total Generating Hours to date: <b>15,451</b>	Total Hours Generation This Month: <b>552</b>
Total Hours in Operation: <b>20,035</b>	Total Hours downtime since installed: <b>4,584</b>
Overall Operational Availability: <b>0.77</b>	Monthly Operational Availability: <b>.742</b>
Gas Meter Reading*: <b>021340</b>	Gas Consumption This Period*: <b>896</b>

Net Electrical Output (kWh): **71,522.3**

Monthly Capacity Factor: **.488** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **11,966.98**

Please note electrical production data was extracted at midnight July 31, 2005. The gas meter reading was collected on Aug 1, 2005 at 08:30.

### Fuel Cell Operational Status (during reporting period):

The following is a summary of the work accomplished during July 2005.

The Coast Guard unit entered the month operating at rated power.

- The unit shutdown due to a failure of the USCG automatic transfer switch power failure. FuelCell Energy repaired this for the USCG. This repair took 3 days.
- The unit went to emergency shut down due to loss of electric grid.
- The unit went to emergency shut down due to loss of customer water supply. The customer repair took 6 days to complete.
- Plant availability at 100% for month

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- None

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- 3 Shutdowns, 2 ESD (Emergency Shutdowns)
- Current condition is full power

**Upcoming Activities (for next monthly period):**

Continue working on funding and operation plan.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
Complete Fuel Cell Power Plant Installation	14 Mar 2003 (Completed)
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Fuel Cell Accepted & On Line	16 May 2003 (Completed)
Commence First Year of Operation	17 May 2003 (Completed)
Tentative “Ribbon Cutting” Ceremony	19 May 2003 (Completed)
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Completion of RDC Project Report	30 November 2004 (Completed)
Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 Sept 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 30 June 2005

### Production Information

Total Accumulated kWh: <b>2,474,762</b>	kWh This Report Period: <b>99,083</b>
Total Generating Hours to date: <b>14,899</b>	Total Hours Generation This Month: <b>599</b>
Total Hours in Operation: <b>19,291</b>	Total Hours downtime since installed: <b>4392</b>
Overall Operational Availability: <b>0.77</b>	Monthly Operational Availability: <b>.83</b>
Gas Meter Reading*: <b>020444</b>	Gas Consumption This Period*: <b>925</b>

Net Electrical Output (kWh): **82,132.6**

Monthly Capacity Factor: **.55** (Actual kWh/Total Possible kWh=250kW x 720 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **12,354.3**

Please note electrical production data was extracted at midnight June 30, 2005. The gas meter reading was collected on June 30, 2005 at 09:00.

### Fuel Cell Operational Status (during reporting period):

The Coast Guard unit entered the month operating at rated power.

- The unit was brought to hot standby for maintenance the 5<sup>th</sup> of June.
- The unit shutdown due to a failure of the USCG automatic transfer switch power failure. FuelCell Energy repaired this for the USCG. This repair took 3 days.

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- Filled HRU Loop and tested for leaks @45 psi. No leaks detected.
- Repaired leak on 20-inch filter of WTS.
- Replaced secondary fuel prep fan.
- Staggered regeneration times for softeners.
- Cleaned 480v xfrm intake and exhaust filters.
- Replaced Primary Fuel prep fan Motor. Replaced secondary DFC compartment Fan Damper and motor
- Installed HMI reboot feature via the Omni-metrix system
- Replaced USCG ATS 24V power supply

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- 2 Shutdowns, 1 ESD (Emergency Shutdowns)
- Current condition is full power

Review of funding and future operations in 2006 are being addressed, a plan for future operation is being developed.

**Upcoming Activities (for next monthly period):**

Continue working on funding and operation plan.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

<u>Major Project Milestone</u>	<u>Date</u>
Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
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Post Project Report to MTC	02 Feb 2004 (Completed)
End of Year 1 Operating Report	30 August 2004 (Completed)
Completion of RDC Project Report	30 November 2004 (Completed)
Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 Sept 2005</b>

**Outlook (general comments on overall "health" of project and upcoming challenges):**

## **Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project**

**Report Period:** 01– 31 May 2005

### **Production Information**

Total Accumulated kWh: <b>2,375,679</b>	kWh This Report Period: <b>125,188</b>
Total Generating Hours to date: <b>14,300</b>	Total Hours Generation This Month: <b>741</b>
Total Hours in Operation: <b>18,571</b>	Total Hours downtime since installed: <b>4271</b>
Overall Operational Availability: <b>0.77</b>	Monthly Operational Availability: <b>.996</b>
Gas Meter Reading*: <b>019519</b>	Gas Consumption This Period*: <b>1049</b>

Net Electrical Output (kWh): **112,580.9**

Monthly Capacity Factor: **.673** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **14,010.44**

Please note electrical production data was extracted at midnight May 31, 2005. The gas meter reading was collected on May 31, 2005 at 10:00.

### **Fuel Cell Operational Status (during reporting period):**

The Coast Guard unit entered the month operating at rated power.

- The unit experienced a plant trips on the 1<sup>st</sup> of May. Unit shut down on flame detected in fuel prep compartment alarm.
- The unit went Grid Independent (60 kW) on 5/7/05 due to grid disturbance. Grid came back immediately. Plant Auto-resync and ramped to power.

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- During troubleshooting the power pal was found to be faulty. Removed the power pal and now able to dial into the unit.

The following preventative maintenance activities were conducted:

- Perform recycle blower 6 Month PM's; WTS 3 & 6 Month PM's; Fresh air blower 3M PM's; all performed IAW maintenance manual
- Replaced secondary DFC motorized fan damper due to seized motor on original. Tested DFC primary fan damper; discovered it is also failed and will need to be replaced.

- Repaired TV-220; working correctly; repaired flame detectors.

The following operational activities were conducted:

- Continued power operations
- 1 Shutdown
- Current condition is full power

PPL and Fuel Cell Energy met this month with the R&DC to finish out issues on the interconnection and the operation of the Cell at full power.

#### **Upcoming Activities (for next monthly period):**

Review of funding and future operations in 2006 will be addressed.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
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Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 May 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

## **Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project**

**Report Period:** 01– 30 April 2005

### **Production Information**

Total Accumulated kWh: <b>2,250,491</b>	kWh This Report Period: <b>112,861</b>
Total Generating Hours to date: <b>13,559</b>	Total Hours Generation This Month: <b>675</b>
Total Hours in Operation: <b>17,827</b>	Total Hours downtime since installed: <b>4268</b>
Overall Operational Availability: <b>0.7605</b>	Monthly Operational Availability: <b>.9375</b>
Gas Meter Reading*: <b>018470</b>	Gas Consumption This Period*: <b>1057</b>

Net Electrical Output (kWh): **99555.49**

Monthly Capacity Factor: **.627** (Actual kWh/Total Possible kWh=250kW x 720 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **14,117.29**

Please note electrical production data was extracted at midnight April 30, 2005. The gas meter reading was collected on May 2, 2005 at 9:00.

### **Fuel Cell Operational Status (during reporting period):**

The fuel cell operated for 675 of 720 total hours (93.75% availability).

The Coast Guard unit entered the month operating at rated power.

The unit experienced a plant trips on the 2<sup>nd</sup>, 7<sup>th</sup>, 20<sup>th</sup>, 23<sup>rd</sup> of April.

Unit tripped on 04/23/05 due to stack temperature alarms. Upon recovery could not go to load rated due to inverter problems.

Unit tripped on 4/21/05 due to grid disturbance.

Unit tripped on 4/7/05 due to water treating system failure.

Unit tripped on 4/2/05 upon receiving flame detection alarm. No flame was detected upon visual search.

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- Replaced Recycle valve, concentrate valve, and flow cube on the water system

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- Four shutdowns
- Current condition is full power

#### **Upcoming Activities (for next monthly period):**

PPL and Fuel Cell Energy will be meeting this month with the R&DC to discuss the operation of the fuel cell once the interconnection is complete.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>31 May 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**



## **Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project**

**Report Period:** 01– 31 March 2005

### **Production Information**

Total Accumulated kWh: <b>2,137,630</b>	kWh This Report Period: <b>118,907</b>
Total Generating Hours to date: <b>12,884</b>	Total Hours Generation This Month: <b>720</b>
Total Hours in Operation: <b>17,107</b>	Total Hours downtime since installed: <b>4223</b>
Overall Operational Availability: <b>0.7531</b>	Monthly Operational Availability: <b>.968</b>
Gas Meter Reading*: <b>016453</b>	Gas Consumption This Period*: <b>1040</b>

Net Electrical Output (kWh): **105237.40**

Monthly Capacity Factor: **.64** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **13,890.24**

Please note electrical production data was extracted at midnight March 31, 2005. The gas meter reading was collected on March 31, 2005 at 9:00.

### **Fuel Cell Operational Status (during reporting period):**

The fuel cell operated for 720 of 744 total hours (96.8% availability).

The Coast Guard unit entered the month operating at rated power.

The unit experienced a plant trip on the 6<sup>th</sup> of March due to a failure of the water system reverse osmosis pump. The pump was replaced, and the unit was brought to operating temperature and ramped to full power on the 8<sup>th</sup> of March.

The unit experienced a plant trip on the 16<sup>th</sup> of March due to a loss of the water system due to debris in a control valve. The flushed clean, and the unit was brought to operating temperature and ramped to full power on the 16<sup>th</sup> of March.

### **Accomplishments (during reporting period):**

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- Replaced RO Pump
- Flushed water system control valve

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- Two shutdowns
- Current condition is full power

**Upcoming Activities (for next monthly period):**

Final metering by PPL should be completed.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

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<b>**Bi-Metering and interconnection Up-grade</b>	<b>30 April 2005</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

## Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project

**Report Period:** 01– 28 February 2005

### Production Information

Total Accumulated kWh: <b>2,018,723</b>	kWh This Report Period: <b>113794</b>
Total Generating Hours to date: <b>12,164</b>	Total Hours Generation This Month: <b>672</b>
Total Hours in Operation: <b>16,363</b>	Total Hours downtime since installed: <b>4199</b>
Overall Operational Availability: <b>0.7434</b>	Monthly Operational Availability: <b>1.00</b>
Gas Meter Reading*: <b>016453</b>	Gas Consumption This Period*: <b>1040</b>

Net Electrical Output (kWh): **101799.8**

Monthly Capacity Factor: **.67** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **13890.24**

Please note electrical production data was extracted at midnight Feb. 28, 2005. The gas meter reading was collected on March 2, 2005 at 8:00, due to the winter storm on the 1<sup>st</sup>.

### Fuel Cell Operational Status (during reporting period):

The fuel cell operated for 672 of 672 total hours (100% availability).

The Coast Guard unit entered the month operating at rated power.

The unit experienced a plant trip on the 2nd of February due to a water pump coupling setscrew loosening. The setscrew was tightened, and the unit was brought to operating temperature and ramped to full power on the 3rd.

### Accomplishments (during reporting period):

The following Major components were replaced:

- None

The following corrective maintenance activities were conducted:

- None

The following preventative maintenance activities were conducted:

- None

The following operational activities were conducted:

- Continued power operations
- Unit emergency shut down (ESD) due to water pump coupling setscrew.
- Recovered plant and brought to power.
- Current condition is full power

**Upcoming Activities (for next monthly period):**

Final metering by PPL should be completed.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

<u>Major Project Milestone</u>	<u>Date</u>
Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
Complete Fuel Cell Power Plant Installation	14 Mar 2003 (Completed)
Startup	27 March 2003 (Completed)
Begin Acceptance Testing	13 April 2003 (Completed)
Fuel Cell Accepted & On Line	16 May 2003 (Completed)
Commence First Year of Operation	17 May 2003 (Completed)
Tentative “Ribbon Cutting” Ceremony	19 May 2003 (Completed)
Post Project Report to MTC	02 Feb 2004 (Completed)
End of Year 1 Operating Report	30 August 2004 (Completed)
Completion of RDC Project Report	<b>30 November 2004 (Completed)</b>
Proposed turn over to Airsta Cape Cod	01 October 2004(Completed)
<b>**Bi-Metering and interconnection Up-grade</b>	<b>30 March 2004</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

## **Monthly Status Report: USCG Air Station Cape Cod Fuel Cell Project**

**Report Period:** 01– 31 January 2005

### **Production Information**

Total Accumulated kWh: <b>1,910,162</b>	kWh This Report Period: <b>58010</b>
Total Generating Hours to date: <b>11,492</b>	Total Hours Generation This Month: <b>354</b>
Total Hours in Operation: <b>15,691</b>	Total Hours downtime since installed: <b>4199</b>
Overall Operational Availability: <b>0.7324</b>	Monthly Operational Availability: <b>.4758</b>
Gas Meter Reading*: <b>015413</b>	Gas Consumption This Period*: <b>531</b>

Net Electrical Output (kWh): **51199.30**

Monthly Capacity Factor: **.31** (Actual kWh/Total Possible kWh=250kW x 744 hours)

Approximate Gas Cost Per CCF is approx. \$1.3356 (based on most recent total bill cost & consumption)

\*Multiply X10 for CCF = \$ **7091.80**

Please note electrical production data was extracted at midnight Jan. 31, 2005. The gas meter reading was collected on Jan. 31, 2005 at 10:00.

### **Fuel Cell Operational Status (during reporting period):**

The fuel cell operated for 354 of 744 total hours (47.58% availability).

The Coast Guard unit entered the month shut down for a replacement of the recycle blower. The recycle blower failure was caused by a free-cool event initiated by a failure of an external electrical transfer switch.

The unit began heat-up on the 7<sup>th</sup> of January after the recycle blower replacement and other corrective maintenance. The unit reached hot standby on the 12<sup>th</sup> of January, and began producing power on the 13<sup>th</sup> of January.

The unit experienced one plant trip on the 18<sup>th</sup> of January due to a loose electrical connection. The connection was fixed, and the unit was brought to operating temperature and ramped to full power on the 21st.

### **Accomplishments (during reporting period):**

The following Major components were replaced:

- Recycle blower
- ECN 0987 Replace 10" HMI Touch Panel with 15" Panel

The following corrective maintenance activities were conducted:

- Install blank PLC card in expansion rack
- Secured Breaker GFI-2 at the top to the DIN rail
- Replace recycle blower greasers
- Perform inspection of 480V main breaker panel
- Inspect and replace if necessary rusted external ESD buttons
- Retightened insulation
- Replaced seal tight and wiring on section between junction box and heater
- Install three blank PLC modules in the intermediate junction box
- Removed and cleaned WTS electrical panel filter
- Perform internal visual inspection of check valves
- Decommission and remove oxygen/methane analyzer system

The following preventative maintenance activities were conducted:

- Perform general cleaning of all compartments

The following operational activities were conducted:

- Continued power operations
- Unit emergency shut down (ESD) due to loss of grid.
- Recovered plant and brought to power.
- Performed unit inspection
- Shutdown unit for component replacement
- Current condition is full power

#### **Upcoming Activities (for next monthly period):**

Final metering by PPL should be completed.

**Project Schedule** (Note: The schedule will be shown on each report, and any changes from the previous report will be in **bold type**.)

<u>Major Project Milestone</u>	<u>Date</u>
Fuel Cell Fabricated, Tested, & Delivered	14 Mar 2003 (Completed)
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<b>**Bi-Metering and interconnection Up-grade</b>	<b>01 February 2004</b>

**Outlook (general comments on overall “health” of project and upcoming challenges):**

A monthly fee is requested by NSTAR for Bi-metering. The Coast Guard first saw this fee in the recloser work order document. The Coast Guard is currently looking into the possibility of not having this fee incurred until such time as when the Coast Guard addresses selling its Renewable Energy Credits. This effort is still on going.